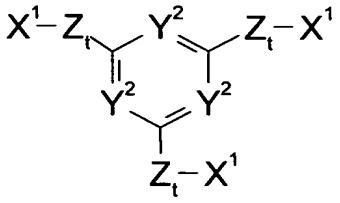
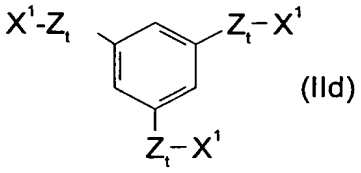


(Id)

wherein: Z is any combination of 1-12 units selected from 1,4-phenylene and methylene units, which units may be combined in any order; t is 1; X^1 is OH, SH, NH_2, COR^5 or $COOR^4$ where R^4 is selected from hydrogen, alkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, heterocyclyl and heterocyclylalkyl, and R^5 is halide, heteroaryl or pseudohalide; n is 3 or 4; with the proviso that if Z is methylene, then Z contains more than three methylene units; Y^2 is CH; X^1, Y^2 and Z are unsubstituted or substituted with one or more substituents each independently selected from Q; and Q is halogen, hydroxy, nitrile, nitro, formyl, mercapto, carboxy, alkyl, haloalkyl, polyhaloalkyl, aminoalkyl, diaminoalkyl, alkenyl containing 1 to 2 double bonds, alkynyl containing 1 to 2 triple bonds, cycloalkyl, cycloalkylalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl, alkylidene, arylalkylidene, alkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxycarbonyl, alkoxycarbonylalkyl, aryloxycarbonyl, aryloxycarbonylalkyl, aminocarbonyl, alkylaminocarbonyl, dialkylaminocarbonyl, arylaminocarbonyl, diarylaminocarbonyl, arylalkylaminocarbonyl, alkoxy, aryloxy, perfluoroalkoxy, alkenyloxy, alkynyloxy, arylalkoxy, amino, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, arylaminoalkyl, diarylaminoalkyl, alkylamino, dialkylamino, arylamino, diarylamino, alkylarylamino, alkylcarbonylamino, alkoxycarbonylamino, arylcarbonylamino, aryloxycarbonylamino, azido, alkylthio, arylthio, perfluoroalkylthio, thiocyano, isothiocyano, alkylsulfinyl, alkylsulfonyl, arylsulfinyl, arylsulfonyl, aminosulfonyl, alkylaminosulfonyl, dialkylaminosulfonyl, arylaminosulfonyl or diarylaminosulfonyl.

7. (Amended Twice) The LPC of claim 6, wherein Z is a group with three or more points of attachment: one to the cyclic nucleus, and the others to two or more X^1 groups.

17. (Amended Twice) The LPC of claim 6, wherein the LPC has formula (IId):

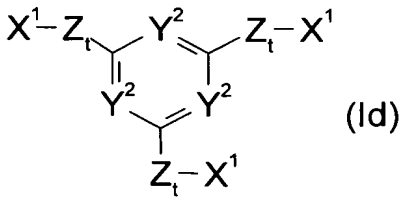


(IId)

31. (Amended Twice) A liquid phase carrier (LPC), selected from the group consisting of 1,3,5-tris{2,5-diaza-9-(5'-O-(4,4'-dimethoxytriphenyl-methyl)-2'-deoxythymidine-3'-O-yl)-1,6,9-trioxononyl}-benzene ((DMT-dT)$_3$-Aryl-LPC), and 1,3,5-tris(9-(2'-deoxythymidin-3'-O-yl)-2,5-diaza-1,6,9-trioxononyl)-benzene (dT$_3$-Aryl-LPC).

39. (Amended three times) A method of solution phase biopolymer synthesis, comprising the steps of:

(a) reacting an LPC with a first monomer N^1; wherein the LPC has formula (Id):



(Id)

wherein: Z is any combination of 0-12 units selected from 1,4-phenylene and methylene, which units may be combined in any order; t is 0 or 1; X^1 is OH, SH, NH_2, COR^5 or $COOR^4$, where R^4 is selected from hydrogen, alkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, heterocyclyl and heterocyclylalkyl; and R^5 is halide, heteroaryl or pseudohalide; n is 3 or 4; Y^2 is CH; X^1, Y^2 and Z are unsubstituted or substituted with one or more substituents each independently selected from Q; and Q is halogen, hydroxy, nitrile, nitro, formyl, mercapto, carboxy, alkyl, haloalkyl, polyhaloalkyl, aminoalkyl, diaminoalkyl, alkenyl containing 1 to 2 double bonds, alkynyl containing 1 to 2 triple bonds, cycloalkyl, cycloalkylalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl, alkylidene, arylalkylidene, alkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxycarbonyl, alkoxycarbonylalkyl, aryloxycarbonyl, aryloxycarbonylalkyl, aminocarbonyl, alkylaminocarbonyl, dialkylaminocarbonyl, arylaminocarbonyl, diarylaminocarbonyl, arylalkylaminocarbonyl, alkoxy, aryloxy, perfluoroalkoxy, alkenyloxy, alkynyloxy, arylalkoxy, amino, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, arylaminoalkyl, diarylaminoalkyl, alkylamino, dialkylamino, arylamino, diarylamino, alkylarylamino, alkylcarbonylamino, alkoxycarbonylamino, arylcarbonylamino, aryloxycarbonylamino, azido, alkylthio, arylthio, perfluoroalkylthio, thiocyano, isothiocyano, alkylsulfinyl, alkylsulfonyl, arylsulfinyl, arylsulfonyl, aminosulfonyl, alkylaminosulfonyl, dialkylaminosulfonyl, arylaminosulfonyl or diarylaminosulfonyl;

(b) separating and purifying the product of step (a);

(c) reacting the product of step (b) with a second monomer N^2, a dimer N^2-N^3 or a trimer N^2-N^3-N^4; and

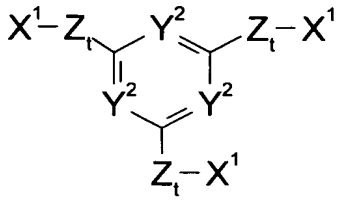
(d) repeating steps (b) and (c) to produce an LPC-bound biopolymer having m monomers, where m is 3 to 100, wherein:

N^1, N^2, N^3...N^m are biopolymer monomers; and

the dimers and trimers comprise the monomers.

40. (Amended twice) The method of claim 39, wherein the LPC is selected from the group consisting of 1,3,5-tris{2,5-diaza-9-(5'-O-(4,4'-dimethoxytriphenyl-methyl)-2'-deoxythymidine-3'-O-yl)-1,6,9-trioxononyl}-benzene ((DMT-dT)$_3$-Aryl-LPC), and 1,3,5-tris(9-(2'-deoxythymidin-3'-O-yl)-2,5-diaza-1,6,9-trioxononyl)-benzene (dT$_3$-Aryl-LPC).

45. (Amended three times) A liquid phase carrier (LPC) that has formula:



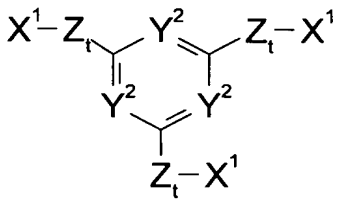
(Id)

wherein: Z is any combination of 1-12 units selected from 1,4-phenylene and methylene, which units may be combined in any order; t is 0 or 1; X^1 is OH, SH, NH_2, COR^5 or $COOR^4$, where R^4 is selected from hydrogen, alkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, heterocyclyl and heterocyclylalkyl; and R^5 is halide, heteroaryl or pseudohalide; Y^2 is CH; X^1, Y^2 and Z are unsubstituted or substituted with one or more substituents each independently selected from Q; and Q is halogen, hydroxy, nitrile, nitro, formyl, mercapto, carboxy, alkyl, haloalkyl, polyhaloalkyl, aminoalkyl, diaminoalkyl, alkenyl containing 1 to 2 double bonds, alkynyl containing 1 to 2 triple bonds, cycloalkyl, cycloalkylalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl, alkylidene, arylalkylidene, alkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxycarbonyl, alkoxycarbonyl-alkyl, aryloxycarbonyl, aryloxycarbonylalkyl, aminocarbonyl, alkylaminocarbonyl, dialkylaminocarbonyl, arylaminocarbonyl, diarylaminocarbonyl, arylalkylaminocarbonyl, alkoxy, aryloxy, perfluoroalkoxy, alkenyloxy, alkynyloxy, arylalkoxy, amino, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, arylaminoalkyl,

diarylaminoalkyl, alkylamino, dialkylamino, arylamino, diarylamino, alkylarylamino, alkylcarbonylamino, alkoxycarbonylamino, arylcarbonylamino, aryloxycarbonylamino, azido, alkylthio, arylthio, perfluoroalkylthio, thiocyano, isothiocyano, alkylsulfinyl, alkylsulfonyl, arylsulfinyl, arylsulfonyl, aminosulfonyl, alkylaminosulfonyl, dialkylaminosulfonyl, arylaminosulfonyl or diarylaminosulfonyl; R^{20} is alkylene, alkenylene, alkynylene, arylene or heteroarylene; k 2 or 3; and j is 0 or 1.

48. (Amended three times) A method of solution phase biopolymer synthesis, comprising the steps of:

(a) reacting an LPC with a first monomer N^1; wherein the LPC has formula (Id):



(Id)

wherein: Z is any combination of 0-12 units selected from 1,2-, 1,3- or 1,4-phenylene and methylene, which units may be combined in any order; t is 0 or 1; X^1 is OH, SH, NH_2, COR^5 or $COOR^4$, where R^4 is selected from hydrogen, alkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, heterocyclyl and heterocyclylalkyl; and R^5 is halide, heteroaryl or pseudohalide; n is 3 or 4; Y^2 is CH; X^1, Y^2 and Z are unsubstituted or substituted with one or more substituents each independently selected from Q; and Q is halogen, hydroxy, nitrile, nitro, formyl, mercapto, carboxy, alkyl, haloalkyl, polyhaloalkyl, aminoalkyl, diaminoalkyl, alkenyl containing 1 to 2 double bonds, alkynyl containing 1 to 2 triple bonds, cycloalkyl, cycloalkylalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl, alkylidene, arylalkylidene, alkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxycarbonyl,